SELMA PRESSURE TREATING SUPERFUND SITE
Selma, California

RECORD OF DECISION AMENDMENT

September 2003

Selma Pressure Treating Superfund Site
Selma, California

United States Environmental Protection Agency
Region 9: San Francisco, California

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ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or Relevant and Appropriate Requirement
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Chemical of Concern
DTSC	(California) Department of Toxic Substances Control
EPA	(United States) Environmental Protection Agency
ESD	Explanation of Significance Differences
FS	Feasibility Study
FFS	Focused Feasibility Study
HI	Health Index
MCL	Maximum Contaminant Level
mg/kg	Milligrams per kilogram
µg/kg	Micrograms per kilogram
NCP	National [Oil and Hazardous Substances] Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
PCP	Pentachlorophenol
RI	Remedial Investigation
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
USACE	U.S. Army Corps of Engineers

PART I: DECLARATION FOR THE RECORD OF DECISION AMENDMENT

A. SITE NAME AND LOCATION

Selma Pressure Treating Superfund site lies approximately 15 miles south of the City of Fresno, adjacent to the city limits of Selma, California (see Figure 1). It is bordered by Golden State Boulevard and Dockery Avenue. The closest major highway is State Highway 99 (see Figure 2).

B. STATEMENT OF BASIS AND PURPOSE

This decision document describes the amendment to the Record of Decision (ROD) for the Selma Pressure Treating Superfund site in Selma, California (the site). The original ROD for the site (U.S. Environmental Protection Agency [EPA] Report No. EPA/ROD/RO9-88/025) was signed on September 24, 1988. The original ROD, and this amended ROD, present remedial actions selected in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act as amended by the Superfund Amendments and Reauthorization Act (SARA), CERCLA Section 117, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) Section 300.435(c)(2)(ii).

This decision is based on the Administrative Record for the site. This Amended ROD will become part of the Administrative Record file for the site in accordance with NCP Section 300.825(a)(2). A copy of the Administrative Record is available for review during normal business hours at the Selma Branch of the Fresno County Library, 2200 Selma Avenue, and at the U.S. EPA Superfund Records Center, 95 Hawthorne Street, Suite 4035, in San Francisco, California.

The U.S. EPA is the lead agency for this site. The California Department of Toxic Substances Control (DTSC) is the support agency.

C. CIRCUMSTANCES REQUIRING ROD AMENDMENT

This Amended ROD modifies the previously selected remedy for contaminated soils at the site. Based on remedial action alternatives evaluated in the 1988 Feasibility Study, the U.S. Environmental Protection Agency selected a remedy in their 1988 Record of Decision (ROD). This Amended ROD incorporates and relies on new information obtained since the original ROD was signed in 1988. It also incorporates the Explanation of Significant Differences (ESD) that was issued for the ROD in 1993 based on additional data collected after the ROD was issued, changes and clarifications to regulations regarding constituents at the site, and technical and design issues. The 1993 ESD modified the cleanup standards for chemicals of concern (COCs) in soil and groundwater, redefined the areas requiring excavation, clarified certain regulatory issues, and mandated that excavated and fixed soils be consolidated into a single impoundment to be covered by a single RCRA-type cap.

The process for selecting the amended remedy for the Selma site was based on information presented in the Final Focused Feasibility Study (FFS), completed in June 2003. The Final FFS presents a detailed analysis of remedial alternatives for addressing the updated information

regarding EPA regulations and constituents in site soil. The Proposed Plan, issued in July 2003, summarizes the efforts involved in the FFS and identifies the Preferred Alternative. Because the Preferred Alternative differs from the remedial action for soil described in the 1988 ROD, an Amended ROD is required.

D. ASSESSMENT OF THE SITE

The response action selected in this Amended Record of Decision is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances from the Selma Pressure Treating Superfund site.

E. DESCRIPTION OF REVISED REMEDY

This Amended ROD selects the final remedy for soil at the site. Groundwater remediation is being performed through operation of a groundwater extraction and treatment, as specified in the 1988 ROD, and is unchanged by this Amended ROD. The major components of the revised remedy are:

1. excavating approximately 21,000 cubic yards of contaminated soil to a maximum depth of 5 feet;
2. placing the excavated soils in an existing on-site impoundment area;
3. placing a new, low-permeability vegetative cap (compliant with RCRA regulations) over soil in the impoundment area;
4. fencing the impoundment area;
5. backfilling the excavated areas; and
6. capping excavated areas with a low-permeability RCRA asphalt cap.

Placing the contaminated soil into an impoundment reduces the potential for inadvertent human contact with the soil. Institutional controls also will be established to maintain industrial use of the site and to limit future construction activities to ensure that the cap remains protective. Maintenance of the asphalt cap will consist of resealing approximately every 5 years.

F. DATA CERTIFICATION LIST FOR ROD AMENDMENT

The following information is included in the Decision Summary (Part II) of this Amended ROD.

- Chemicals of concern (COCs) and their respective health-based concentrations (Section D).
- Cleanup levels and performance standards established for the COCs (Section D)
- Summary of risks presented by the COCs (Section E)
- How source materials that constitute principal threats are addressed (Sections F and G)
- Current and reasonably anticipated land use assumptions used in the risk assessment and Amended ROD (Section D)
- Estimated capital, annual operation and maintenance (O&M), and total present worth costs, discount rate, and number of years over which the costs for the remedy are estimated (Section J)
- Key considerations that led to selecting the remedy (Section J).

Additional information can be found in the Administrative Record for the site.

G. STATUTORY DETERMINATIONS

The revised remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. The remedy uses permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practical for this site. Because treatment of the principal threat at the site was not found to be practical, however, this remedy does not satisfy the statutory preference for treatment as a principal element. The remedy was identified and selected consistent with NCP and EPA guidance and directives, including "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (EPA Report No. EPA/540/G-89/004; October 1988).

Because this remedy will result in hazardous substances remaining on site at concentrations that disallow unlimited use and unrestricted exposure, a review will be conducted at least once every five (5) years to confirm that the remedy continues to provide adequate protection of human health and the environment pursuant to Section 121(C) of CERCLA, 42 U.S.C. §9621(C).

Elizabeth Adams
Chief, Site Cleanup Branch
Superfund Division
United States Environmental Protection Agency
Region 9

SEPTEMBER 30, 2003
Date

PART II: DECISION SUMMARY

A. SITE NAME, LOCATION, AND DESCRIPTION

The Selma Pressure Treating Superfund site lies about 15 miles south of the City of Fresno, adjacent to the city limits of Selma, California. Figure 1 shows a site location map. Zoned for industrial use, the site lies in a transition zone between agricultural, residential, and industrial areas. Twelve residences and/or business are located within a quarter-mile of the site. The site occupies approximately 40 acres, including a 14-acre former wood treatment and storage facility and a 26-acre former vineyard. Site topography is generally flat.

Current use of the former vineyard area of the site is as a tree and cardboard-recycling transfer facility. Between November 1996 and September 1997, a small transmission repair business leased the maintenance building formerly located on the operating area of the site. This building was demolished in 1997.

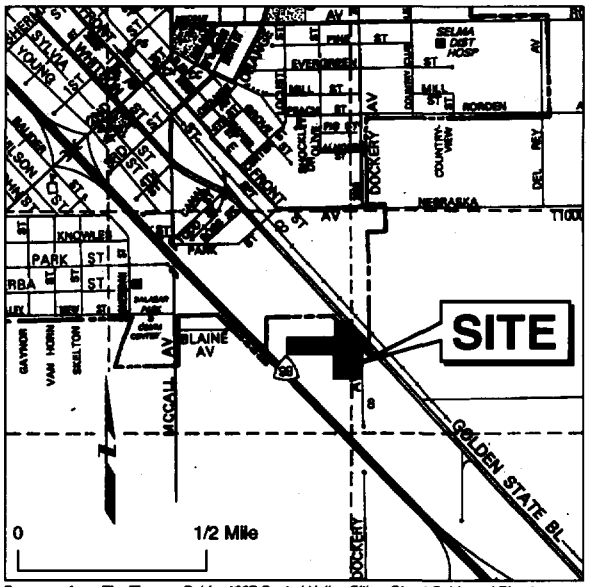

Figure 1. Site Location Map

B. SITE HISTORY AND ENFORCEMENT ACTIVITIES

Selma Pressure Treating Company began wood treatment operations at the site in 1942; the original operating area covered approximately 3.5 acres. The treatment process originally involved dipping wood into a mixture of pentachlorophenol (PCP) and oil, then drying the wood on open racks. A pressure-treating process was installed in 1965. The process consisted of using pressurized vessels to impregnate wood with chemical preservatives, including fluro-chromium-arsenate-phenol, chromated copper arsenate, PCP, copper-8-quinolinolate, LST concentrate, Woodtox 140RTU, and Heavy Oil Penta 5% solution. The pressure-treated wood

was placed on racks in a drip pad area, then moved to a wood storage area. From 1942 to 1971, waste from the treatment plant was disposed of in several ways: runoff into drainage ditches and percolation ditches; drainage into dry wells; spillage onto the ground; or placement in an on-site unlined pond and sludge pit. After 1971, an effluent recovery system was installed at the site for waste disposal.

Historical records indicate that the former vineyard was never used for wood treatment operations, but that area received some drainage from the operating area of the site. The operating and wood storage areas were paved with asphalt in 1982; the asphalt remains in place. Wood treatment activities were suspended in 1994. In November 1997, all pressure vessels and tanks were removed from the site. A concrete drip pad and other concrete foundations in the former retort and stormwater runoff tank areas remain in place. Figure 2 shows a layout of the site, with its former structures and areas.

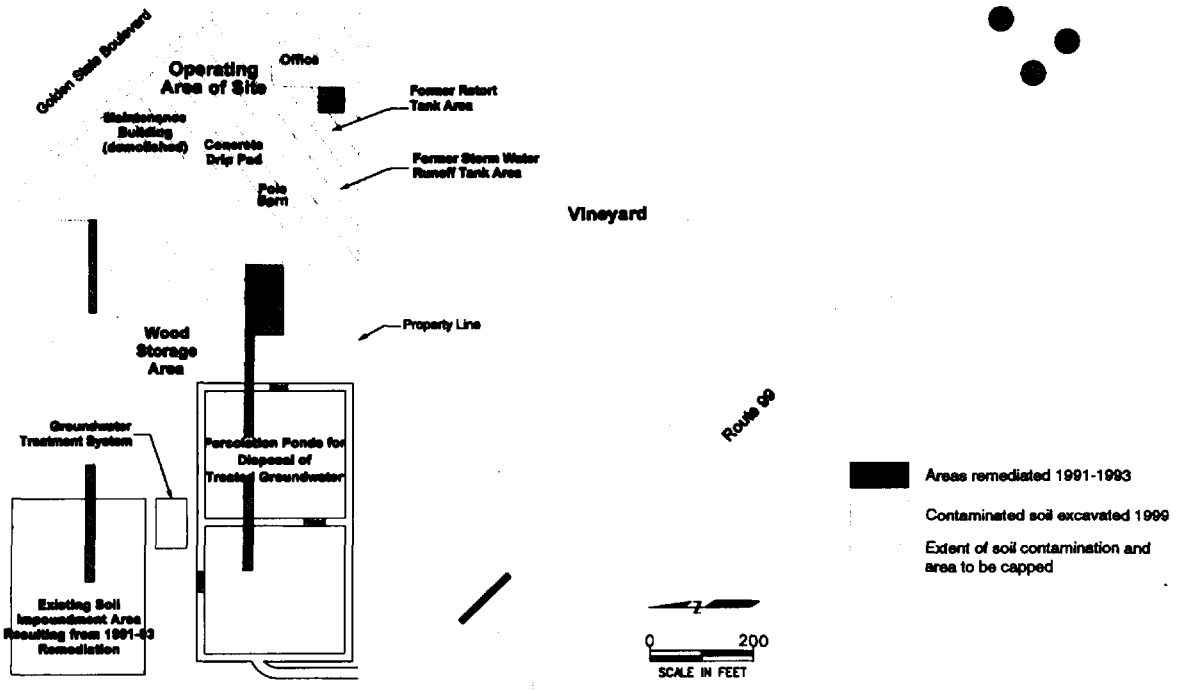

Figure 2. Site Layout

The site was added to the EPA's National Priorities List (NPL) in 1983. In 1984, the EPA initiated a Remedial Investigation/Feasibility Study (RI/FS) to identify chemicals of concern (COCs) at the site, investigate their extent, and identify appropriate remedial action alternatives. Results of soil investigations, performed at the site in 1986 and 1987 as part of the RI, are presented in the March 1988 Remedial Investigation Report for the site. These data were used to develop the June1988 FS.

Based on results of the 1988 FS, the initial Record of Decision (ROD) stipulated a remedy that consisted of excavating soil containing COCs at concentrations that exceeded cleanup standards, treating the soil with a fixing agent, placing the fixed soil in an on-site, unlined impoundment, and covering the impoundment with a RCRA-type cap. In 1993, the EPA issued an Explanation of Significant Differences from the ROD (ESD) to clarify and modify the ROD based on data collected after the ROD was issued, changes and clarifications to regulations regarding constituents found at the site, and technical and design issues. Based on groundwater data collected since 1988, the COCs in site soil have not significantly affected groundwater quality over the operating period of the site. This information prompted the EPA to commission a Focused Feasibility Study (FFS) to reevaluate the selected remedial action for soil and to assess alternatives reflective of this newer information. Based on the FFS (issued in June 2003) a Proposed Plan was developed, which described the EPA's preferred alternative for soil remediation. The Proposed Plan was approved by the State of California (through the DTSC) and issued in July 2003.

C. COMMUNITY PARTICIPATION

The public has had, and continues to have, access to site-related documents (the Administrative Record), including the RI Report, FS Report, FFS Report, and Proposed Plan, at the Selma Branch of the Fresno County Library, as well as at the EPA's Superfund Records Center in San Francisco.

The EPA assigned a Community Involvement Specialist, Viola Cooper, to the Selma Pressure Treating Superfund site to ensure that public input and comment were considered when the Proposed Plan was issued in July 2003.

A short fact sheet describing the Proposed Plan was issued on July 25, 2003. The public was invited to submit comments to the EPA via mail, fax, or e-mail during the public comment period that ran from July 23 to August 22, 2003. Comments were also solicited at a community meeting regarding the Proposed Plan held on August 7, 2003, in Selma. A poster session preceded the public meeting. During both the poster session and public meeting, EPA representatives described the soil remediation alternatives they evaluated and presented their preferred alternative. Public comments sent to the EPA or received at the meeting were recorded, considered, and responded to. EPA's responses to both the oral and written comments received during the public comment period are included in the Responsiveness Summary (Part III) of this Amended ROD.

D. SITE CHARACTERISTICS

1. Location and Extent of Contamination

Figure 2 shows the extent of soil contamination determined from data collected between 1993 and 1999. Figure 2 also shows areas of the site where soil was remediated between 1991 and 1993 and areas of additional excavation in 1999. Following the 1999 excavations, and based on results of site soil investigations, the EPA defined remaining areas where soil concentrations of COCs exceed cleanup standards. It was calculated that approximately 21,000 cubic yards of soil remaining at depths as great as 5 feet below ground surface are affected with COCs at concentrations in excess of cleanup standards. In addition, it has been estimated that 30,000

cubic yards of soil that contains COCs in excess of cleanup standards lie as much as 25 feet below grade.

2. Chemicals of Concern and Cleanup Standards

Based on soil investigation data collected for the RI/FS, and between 1991 and 1993 during initial cleanup activities, the chemicals of concern (COCs) identified at the Selma Pressure Treating Superfund site are arsenic, dioxins/furans, and pentachlorophenol (PCP). Soil remediation objectives for this Amended ROD are (1) to mitigate human exposure to soil that contains COCs at concentrations that exceed the cleanup standards established in the 1988 ROD and the 1993 ESD, and (2) to mitigate the risk to groundwater through contact with soil containing arsenic, dioxins/furans, PCP, and/or hexavalent chromium that result in concentrations of those chemicals in groundwater in excess of federal and state Maximum Contaminant Levels (MCLs).

Cleanup standards for both soil and groundwater were presented in the 1988 ROD and modified in the 1993 ESD. The following soil cleanup standards have been adopted for arsenic, dioxins/furans, and PCP.

	Original ROD Value (1988)	**Modified ESD Value (1993)**
• arsenic	50 milligrams/kilogram (mg/kg)	25 mg/kg
• PCP	none	17 mg/kg
• dioxins/furans	1 microgram per kilogram (μg/kg) (TEQ[1])	1 μg/kg (TEQ)

3. Current and Future Site Uses

Most of the 40-acre site currently is vacant. The former vineyard area is used as a tree and cardboard-recycling transfer facility. The office remains in place, and concrete drip pad and other concrete foundations near the former retort and stormwater runoff tank areas remain in place. Under the selected remedy, soil containing COCs in excess of cleanup standards will be excavated from the operating and wood storage areas of the site to a maximum depth of 5 feet below ground surface. The soil will be consolidated in the existing on-site impoundment with soil previously placed there. The excavated areas will be backfilled, regraded, and capped. The impoundment area will be capped and fenced. The purpose of consolidating soil in the impoundment area and fencing that impoundment area is to limit the potential for inadvertent human contact with soil containing COCs in excess of cleanup standards if the cap is breached. Institutional controls (land use restrictions) will be used to restrict land use and activities to be protective of human health and the environment. The selected remedy allows for constructing light, permanent structures on the site and installing permanent subsurface utilities, which typically are installed within 4 feet of ground surface.

[1] Toxicity equivalent concentrations of dioxins/furans.

E. SUMMARY OF SITE RISKS

The EPA conducted an Environmental Risk Assessment of the Selma Pressure Treating Superfund site in 1988 to estimate the potential health risks posed by contaminants detected at the site. In general, risk assessments use information regarding the toxic properties of the chemicals of concern (COCs), along with the means by which a person could be exposed to those chemicals, to estimate the significance of a potential health risk if that person were exposed to the chemicals at the site. Actual health risks, of course, occur only if people are exposed to the COCs; without exposure there is no risk.

The EPA assesses potential risks by (1) identifying the COCs at the site, (2) characterizing the population potentially exposed to those chemicals, and (3) evaluating the potential health risks resulting from exposure to the affected soil. The EPA considers two types of risk, cancer and non-cancer. Cancer risk is reported as the chance that a person exposed to a chemical will develop cancer during a 30-year period. A cancer risk of one in one million, for instance, indicates that there is one chance in a million that a person would get cancer because of exposure to the chemical for 30 years. Cancer risks greater than one in ten thousand generally mean that some action must take place to mitigate the risks at a site.

Non-cancer risks generally include reactions such as skin irritation or breathing problems brought about by exposure to a chemical. Non-cancer risks are measured by a Hazard Index (HI). The HI for a site is calculated based on the types and amounts of chemicals at the site and the types of exposures that might occur. If the HI is less than one (1), it is extremely unlikely that a non-cancer health reaction would occur. Higher HI values indicate greater chances of adverse effects. Non-cancer risks greater than one generally mean that some action must be taken to mitigate the risks at a site.

Exposures to metals and organic compounds associated with the wood-preserving chemicals used at the site have been associated with increased cancer and some non-cancer effects in humans or laboratory animals. The EPA evaluated scenarios by which current and future workers, visitors, and local residents might be exposed to contaminated soil by accidental ingestion, inhalation, or through skin contact.

Results of the EPA's Environmental Risk Assessment indicated that exposure of on-site workers (those working continuously at the site) to surface soils through skin adsorption, incidental ingestion, or inhalation could present a carcinogenic risk. This risk was found to be associated primarily with exposure to arsenic and dioxins/furans. Cleanup standards were established to be protective of groundwater and all direct-contact scenarios under industrial use of the site. Once the site meets the cleanup standards for soil, the theoretical risk to on-site workers and visitors will be less than one in one hundred thousand, a level that lies within the range of acceptable risks established by both the EPA and California Department of Toxic Substances Control (DTSC).

F. CIRCUMSTANCES PROMPTING THE REVISED REMEDY

As directed by the 1988 ROD, the U.S. Army Corps of Engineers (USACE), Sacramento District, conducted soil cleanup activities at the site between 1991 and 1993. In conjunction

with this soil remediation program, additional soil data were collected from the operating area of the site, which had not been investigated as part of the Remedial Investigation. The 1993 Explanation of Significant Differences from the ROD (ESD) modified the cleanup standards for chemicals of concern (COCs) in soil and groundwater, redefined the areas requiring excavation, clarified certain regulatory issues, and mandated that excavated and fixed soils be consolidated into a single impoundment to be covered by a single RCRA-type cap.

Additional soil data were collected by the USACE and others in 1994, 1995, 1998, 1999, and 2002. Based on results of soil investigations, several areas of the site were excavated in 1999, totaling approximately 5,000 cubic yards. Additionally, EPA defined other areas where concentrations of COCs in soils exceeded cleanup standards. It was calculated that areas where concentrations of COCs in soils exceed cleanup standards to a maximum depth of 5 feet represent approximately 21,000 cubic yards of soil. In addition, it was estimated that 30,000 cubic yards of soil that exceed cleanup standards lie as much as 25 feet below grade. The new estimate of the quantity of contaminated soil exceeding cleanup standards significantly exceeded previous estimates (ROD – 16,100 cubic yards, 1993 ESD – 11,500 cubic yards), resulting in greatly increased expected costs for the original remedy. Based on this information and data indicating that, except for chromium, chemicals in soil have not affected the quality of site groundwater, the EPA decided to reconsider the objectives for soil remediation and reevaluate the selected remedial action. The EPA commissioned a Focused Feasibility Study (FFS) to evaluate a range of alternatives reflective of the new information. The FFS considered five possible alternatives for soil remediation and evaluated them based on the nine EPA-promulgated criteria for evaluating remedial alternatives. The EPA-preferred alternative (Alternative 5 in the FFS) consists of excavating affected soil, consolidating it into the on-site impoundment (along with the soil stockpiled in 1999), capping the impoundment, fencing the impoundment, backfilling excavated areas, capping the excavated areas with a low-permeability RCRA asphalt cap and establishing institutional controls (land use restrictions). The Preferred Alternative has been selected as the revised remedy for soils at the site.

Based on information and understanding available at this time, both the EPA and the State of California expect the revised remedy to be protective of human health and the environment, to comply with applicable or relevant and appropriate federal state requirements (ARARs), and to be cost-effective. Because the revised remedy differs from the one stipulated in the 1988 ROD, an Amended ROD is required.

G. Remedial Action Objectives

The overall goal of any remedial action objective (RAO) is to protect human health and the environment from hazardous wastes produced by a site. In the 1988 FS, remedial action objectives for soil, groundwater, and air were presented in terms of limiting cancer risk. Based on revised cleanup standards and new soil data, the RAOs identified for soil in the 2003 FFS were:

- to mitigate human exposure through inhalation, skin contact, and incidental ingestion to soil containing arsenic, PCP, and/or dioxins/furans at concentrations that exceed the cleanup standards established in the ESD to the ROD; and

- to mitigate the risk to groundwater through contact with soil containing arsenic, PCP, dioxins/furans, and/or hexavalent chromium by infiltration or by fluctuating groundwater levels that could result in concentrations of these chemicals in groundwater in excess of California MCLs.

The RAO for air is to maintain background air quality levels. Air will be monitored during implementation of any soil remediation program at the site to check that the objective for air is met.

The remedial action objectives for groundwater are irrelevant to the revised remedy in the Amended ROD, as the Amended ROD concerns soil only. Based on the consistently low concentrations of arsenic, PCP, and dioxins/furans detected in groundwater, remediation of soil containing those chemicals is not required in order to protect groundwater.

H. DESCRIPTION OF ALTERNATIVES

1. Original Remedy from 1988 Record of Decision

The remedy for site soil that the EPA selected in 1988, based on the 1988 FS, consisted of excavating soil containing COCs at concentrations in excess of site contemporary cleanup standards, treating that soil with a fixing agent, placing the fixed soil in an on-site, unlined impoundment, and covering the impoundment with a RCRA cap compliant with guidelines stipulated by the Resource Conservation and Recovery Act (RCRA). Institutional controls also were specified to provide for the integrity and maintenance of the capped materials and to prevent developments on the site that would create opportunities for increased exposures.

2. Alternatives Evaluated in 2003 Focused Feasibility Study

Based on the results of field and laboratory studies performed after1988, the 2003 Focused Feasibility Study (FFS) evaluated five soil remediation alternatives, as summarized below. For all the alternatives, except the No Action alternative, institutional controls were required to maintain industrial use of the site and to control excavation and construction activities to ensure that the soil and asphalt caps remain protective. All five alternatives would have left some of the contaminated soil in place. The alternatives, and the evaluation process, are described in detail in the 2003 FFS.

Alternative 1—No Action. The EPA always considers a No Action alternative, in which no further action is taken at a site, to serve as a baseline for comparison with other remedial alternatives. A No Action alternative can be chosen only if the concentrations of COCs are less than the levels at which the EPA would take further action, and therefore is inappropriate for the Selma site. There would be no cost for the No-Action alternative.

Alternative 2—Capping and Institutional Controls. This alternative would leave contaminated soils in place, constructing a clean fill and low-permeability cap (compliant with RCRA design criteria for caps covering hazardous waste left in place) over a 5.4-acre area of the site. The cap would limit human contact with contaminated soil and minimize infiltration of rain water. Most of the existing asphalt and concrete foundations would be left in place. Approximately 5,000 cubic yards of contaminated soil excavated in 1999 and stockpiled on-site

would be spread over the site before it was capped. Institutional controls would be put in place as described above. Maintenance of the cap would consist of resealing approximately every 5 years. The present worth cost estimate for Alternative 2 was $1.6 million to $2.5 million, depending on thickness of cap used.

Alternative 3—Excavation, Off-Site Disposal in RCRA Landfill, and Institutional Controls. This alternative would involve removing surface asphalt and concrete, excavating approximately 21,000 cubic yards of contaminated soil to a maximum depth of 5 feet, transporting the soil to a Class I RCRA landfill, treating the soil to meet Land Disposal Restrictions, backfilling the excavations with clean soil, and placing a low-permeability RCRA cap over the excavated areas. Contaminated soil below 5 feet would be left in place. The approximately 5,000 cubic yards of contaminated soil excavated in 1999 and currently stockpiled on-site would also be transported to an approved landfill. Institutional controls would be established as described above. Maintenance of the cap would consist of resealing approximately every 5 years. The present worth cost estimate for Alternative 3 was $9.2 million.

Alternative 4—Fixation, Capping, and Institutional Controls. A slight variation on the remedy selected in the 1988 ROD, Alternative 4 would have used a combination of in situ and ex situ fixation techniques in which a cement-like material is mixed with soil. The cement-like material "fixes," or binds, the COCs in the soil matrix, preventing further movement to groundwater. Approximately 42,000 cubic yards of soil would be mixed in place for this alternative. Approximately 10,000 cubic yards of shallow soil would be excavated, then mixed with cement-like material before being replaced in the excavation. The 5,000 cubic yards of contaminated soil excavated in 1999 and currently stockpiled on-site would be included with the shallow soil. To prevent human exposure to the fixed soil, it would be capped with a low-permeability asphalt cap compliant with RCRA regulations. Institutional controls would be put in place as described above. Maintenance of the cap would consist of resealing approximately every 5 years. The present worth cost estimate for Alternative 4 was $7.6 million.

Alternative 5—Excavation and Consolidation into Existing On-Site Impoundment, Fencing, and Institutional Controls. Alternative 5, the alternative selected in the Proposed Plan as the Preferred Alternative, became the revised remedy after approval by the DTSC and EPA consideration of public comments. It involves excavating approximately 21,000 cubic yards of contaminated soil to a maximum depth of 5 feet; placing the soil in the existing on-site impoundment area; placing a new, low-permeability vegetative cap (compliant with RCRA regulations) over soil in the impoundment; fencing the impoundment area; backfilling excavated areas; and capping the excavated areas with a low-permeability RCRA asphalt cap. Contaminated soil below a depth of 5 feet will be left in place. The approximately 5,000 cubic yards of contaminated soil excavated in 1999 and currently stockpiled on-site will also be consolidated in the on-site impoundment. Institutional controls, described above, will be put into place to maintain industrial use of the site and to limit future construction activities to protect the caps. Maintenance of the asphalt cap will consist of resealing approximately every 5 years.

To accommodate the excavated soil, the top of the impoundment will be raised to approximately 15 feet above existing site grade, and the footprint of the impoundment will be expanded from its current approximate 1.7 acres to approximately 2.0 acres. The present worth cost estimate for Alternative 5 was $2.5 million.

I. Comparison of Alternatives for Revised Remedy

As stipulated by federal regulations, the EPA uses nine criteria to evaluate each remedial alternative and compare them against each other. Seven of these criteria are used to compare the technical aspects of alternatives; the other two concern State acceptance of the remedy and community acceptance of the remedy. The State of California (DTSC) stated its preference for Alternative 5. Community response was requested through an open comment period July 23 through August 22, 2003, and a public meeting held in Selma, California, on August 7, 2003. The Responsiveness Summary (Part III of this Amended ROD) presents, considers, and responds to community input.

A detailed analysis of the five alternatives was presented in the FFS. The comparison based on the seven technical criteria is summarized below and in Table 1.

Evaluation Criteria	Alternative 1 No Action	Alternative 2 Capping and Institutional Controls	Alternative 3 Excavation, Off-Site Disposal in RCRA Landfill, and Institutional Controls	Alternative 4 Fixation, Capping, and Institutional Controls	Alternative 5 Excavation and Consolidation Into Existing On-Site Impoundment, Capping, Fencing, and Institutional Controls
Overall Protectiveness	○	●	●	●	●
Compliance with State and Federal Requirements	○	●	●	●	●
Long-term Effectiveness	○	●	●	●	●
Implementability	○	●	●	●	●
Short-term Effectiveness	◒	●	●	●	●
Reduction of Toxicity, Mobility or Volume by Treatment	○	◒	◒	◒	◒
Present Worth Cost	$0	$1.6 to $2.5 Million	$9.2 Million	$7.6 Million	$2.5 Million
State Agency Acceptance	State of California DTSC has expressed a preference for Alternative 5 over all other alternatives.				
Community Acceptance	The community accepts Alternative 5 but has expressed a preference for Alternative 3 if feasible.				

● = Fully meets criterion ◒ = Partially meets criterion ○ = Does not meet criterion

Table 1. Comparison of Alternatives

Overall Protection of Human Health and the Environment. All the alternatives except for Alternative 1, the No Action alternative, were found to be protective of human health and the environment.

Compliance with ARARs. All the alternatives except for Alternative 1 could be performed in compliance with applicable or relevant and appropriate requirements (ARARs).

Long-Term Effectiveness. All the alternatives except for Alternative 1, the No Action alternative, could meet the criterion for long-term effectiveness, as long as institutional controls and maintenance of the asphalt cap are implemented successfully. Alternative 5 potentially could meet this criterion more effectively than Alternatives 2 or 4, because moving the top 5 feet of contaminated soil to the impoundment lessens the potential for inadvertent human contact with contaminated soil.

Reduction of Toxicity, Mobility, or Volume. All the alternatives except for Alternative 1, the No Action alternative, could at least partly meet this criterion. Alternative 3 was ranked highest because the toxicity and mobility of soil would be reduced after the soil was treated to meet Land Disposal Requirements and placed in a landfill. Alternatives 2 and 5 would reduce the mobility but not toxicity or volume of contaminated soil. Alternative 4 would not change the toxicity of contaminants; fixation would reduce the mobility but increase the volume of contaminated soil.

Short-Term Effectiveness. Alternative 2 would be most effective in the short term because (1) very little debris would be generated during implementation and (2) exposure of construction workers to contaminated soil would be minimized.

Implementability. Alternative 2 was considered the easiest to implement of the four acceptable alternatives. Alternatives 2 and 5 were about equally easy to implement, and Alternative 4 was the most difficult to implement.

Cost. Alternative 3 was estimated to cost the most to implement ($9.2 million), followed by Alternative 4 ($7.6 million), Alternative 5 ($2.5 million), and Alternative 2 ($1.6 million to $2.5 million).

Based on the requirements of CERCLA, the detailed analysis of the alternatives using the nine criteria specified by the EPA, and public comments, the EPA selected Alternative 5—Excavation and Consolidation into Existing On-site Impoundment, Capping, Fencing, and Institutional Controls—as the Preferred Alternative for the Selma Pressure Treating Superfund site. Given the State of California's preference for Alternative 5 and the public comments received, Alternative 5 was selected as the revised remedy for the site. Based on information

available at this time, the EPA and State of California expect Alternative 5 to be protective of human health and the environment, to comply with ARARS, and to be cost-effective.

J. REVISED REMEDY

1. Description of Revised Remedy

The revised remedy involves excavating soil containing chemicals of concern (COCs) in excess of cleanup standards from the operating and wood storage areas of the site to a maximum depth of 5 feet; consolidating the excavated soil into the existing on-site impoundment with soil previously remediated; placing a cap over the soil in the impoundment area; fencing the impoundment area; backfilling the excavated areas; regrading and capping the excavated areas; and implementing institutional controls to restrict land use and activities to be protective of human health and the environment. Contaminated soil below a depth of 5 feet will be left in place. The approximately 5,000 cubic yards of contaminated soil excavated in 1999 and currently stockpiled on-site will also be consolidated in the on-site impoundment. Maintenance of the asphalt cap will consist of resealing approximately every 5 years. The vegetative cap will consist of native plant materials that require minimal maintenance. Maintenance of the vegetative cap will consist of semi-annual inspections for erosion control for the first few years, until vegetation is established, and annual inspections thereafter.

To accommodate the excavated soil, the top of the impoundment will be raised to approximately 15 feet above existing site grade, and the footprint of the impoundment will be expanded from its current approximate 1.7 acres to approximately 2.0 acres. The purpose of placing the contaminated soil in the impoundment is to limit the potential for inadvertent human contact with the contaminated soil. This alternative allows for constructing light, permanent structures on the site and installing permanent subsurface utilities, typically installed within 4 feet of the ground surface.

To implement the remedy, asphalt and approximately 41,000 square feet of concrete will be removed to access the underlying soil. This debris will be disposed of in the on-site impoundment. Limited decommissioning of buried pipes and utilities also may be required. The EPA has specified that the office (a house which served as the Selma Pressure Treating Company office, now fenced off from the site) is not to be demolished as part of the soil remedial action.

Based on soils data, it is estimated that approximately 21,000 cubic yards of soil within 5 feet of the ground surface contain COCs in excess of cleanup standards. Excavating 21,000 cubic yards of soil is estimated to require about 20 days. Construction workers will wear personal protective equipment and will be trained to perform construction activities in accordance with Cal-OSHA regulations. Dust control measures, such as applying water to the soil, will be implemented to mitigate generation and transport of airborne soil particles.

Excavated areas will be backfilled to grade with clean fill obtained from an on-site source. After backfilling activities are completed, the site will be graded to return the excavated areas to original local grade. After grading, the site will be covered with a low-permeability cap. Figure 3 provides a schematic of what the impoundment might look like.

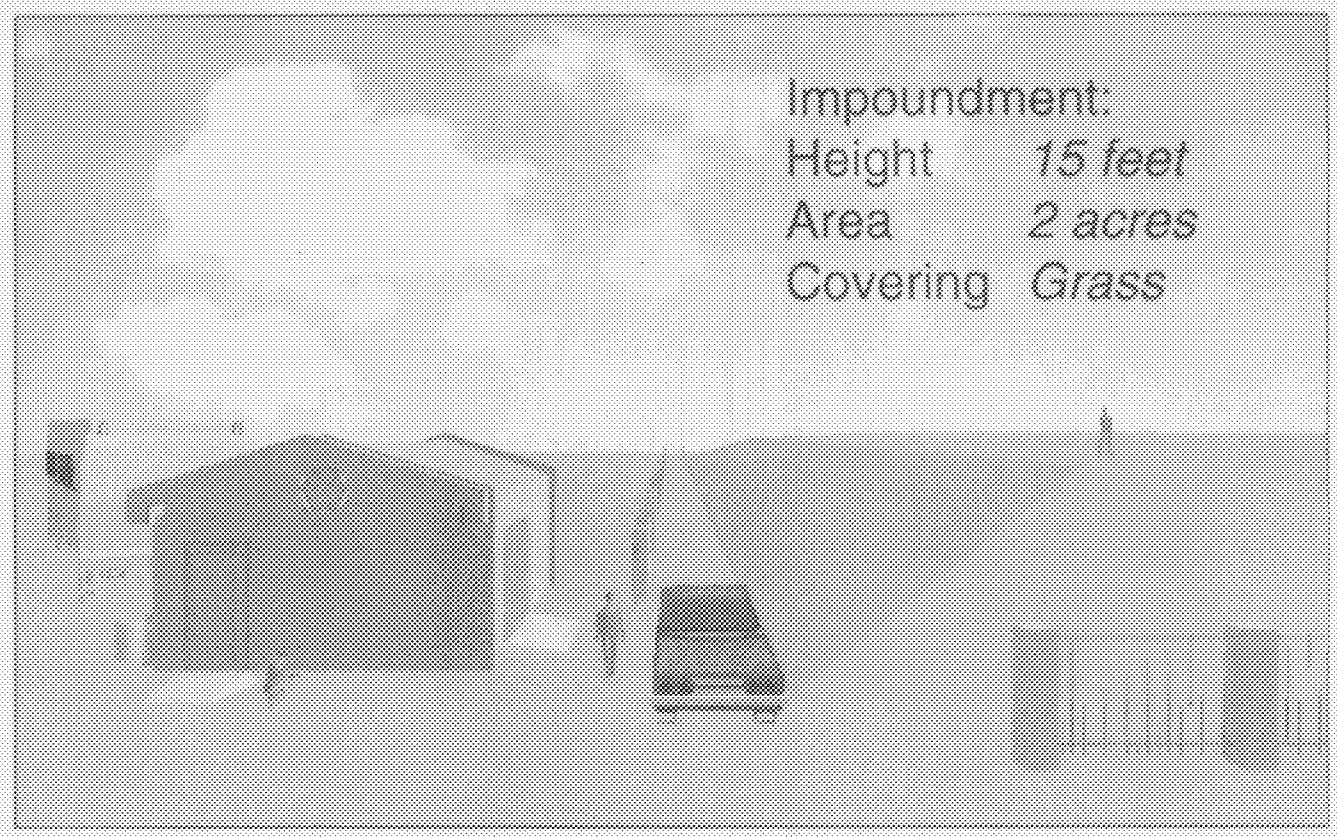

Figure 3. What Will the Site Look Like?

In addition to the estimated 21,000 cubic yards of soil to be excavated as part of this remedy, approximately 5,000 cubic yards of contaminated soil that were excavated during the 1999 remedial activities are stockpiled on site. Those soils will also be disposed of in the impoundment. To accommodate the soils, the top of the impoundment will be raised and expanded.

To prepare the impoundment area to receive additional soil, the existing RCRA cap will be removed and the cap material incorporated into the backfill for the excavated areas.

Fencing will hinder human or animal entry to the impoundment area, protecting individuals from contaminated soils in case the cap were breached. Institutional controls will be put in place to maintain industrial use of the site and to restrict activities in the impoundment area and in areas of the site where soil containing COCs in excess of cleanup standards remains below 5 feet.

The impoundment area will be maintained through annual inspections, re-seeding, and minor repairs as required. Side slopes will be monitored for signs of erosion, rutting, loss of material, or slippage. Additional inspections might be advisable after heavy storms to check the integrity of the cap. The caps proposed for the impoundment and excavation areas of the site will be reliable if maintained regularly. The risk of breaching the impoundment cap and exposing contaminated soil is low because the cap will be approximately 1.5 feet thick and the impoundment will be fenced. COCs remaining under the former operating and wood treatment areas will lie at least 5 feet below ground surface.

2. Estimated Costs of Revised Remedy

As detailed in the June 2003 Focused Feasibility Study (FFS), the estimated net present value cost for the revised remedy is $2.5 million. Operation and maintenance (O&M) costs to inspect, re-seed, and perform minor repairs to the impoundment cap every year over a 30-year period and to reseal the asphalt cap over the former operations and wood treatment area every 5 years represents approximately $350,000 of that total. A present worth analysis was performed for each remedial alternative. A discount factor was applied to itemize expenditures for each alternative that occur beyond the base year over the period of analysis. All costs for the alternatives during the period of analysis were related to a common base year, so that costs could be compared on the basis of a single figure representing the amount of money that, if invested in the base year and disbursed as needed, would provide for all the costs associated with the remedial action and O&M over its planned life. Calculations supporting cost estimates are detailed in Appendix A of the FFS.

K. STATUTORY DETERMINATIONS

1. Protection of Human Health and the Environment

The revised remedy described in this Amended ROD remains protective of human health and the environment because it consolidates and covers contaminated soil to reduce potential contact. Institutional controls will be established to protect the integrity of the remedy, control site use and access, and prevent exposure to buried contaminated soils. Long-term groundwater monitoring will continue as part of the groundwater remedy for the site.

There are no short-term threats from the site or from implementing the revised remedy that cannot be mitigated readily. Further, no cross-media impacts are expected as a result of implementing the remedy.

2. Compliance with Applicable or Relevant and Appropriate Requirements

The revised remedy will attain the Applicable or Relevant and Appropriate Requirements (ARARs), which are listed in the attached Table 2.

Because the affected soil at the Selma site contains listed hazardous wastes regulated under RCRA, the soil is considered hazardous under the "contained-in" policy. Therefore, the general facility standards, groundwater monitoring requirements and closure and landfill requirement (22 CCR 66264.10 through 66264.19; 22 CCR 66264.90 et. Seq. through 22 CCR 66264.101; 22 CCR 66264.310; and 22 CCR 66264 110 through 66264.120) are applicable to the management of the hazardous waste soils, i.e., excavation, consolidation, capping. The land disposal restrictions (LDRs 22 CCR 66268) do not apply to the consolidation of the excavated soil at the impoundment because EPA considers the impoundment as part of the area of contamination (AOC) at the site. Figure 3 of the Final Focused Feasibility Study depicts the area of the impoundment as part of the AOC of the Selma site.

Aside from the RCRA requirements, the ARARs for the revised remedy include air requirements for the excavation activities.

3. Cost-Effectiveness

Cost-effectiveness is evaluated based on three criteria: (1) long-term effectiveness and permanence; (2) reduction of toxicity, mobility, or volume through treatment; and (3) short-term effectiveness. Overall effectiveness is then compared to estimated remediation cost to evaluate whether a potential remedy is cost-effective. The revised remedy presented in this Amended ROD enhances the long-term effectiveness of the original remedy because it increases the amount of contaminated soil capped, extends the areal limits of the capping system, and applies additional capping to contain contaminated soils that were identified since the original ROD was issued in 1988. This revised remedy also provides for a high level of short-term effectiveness because it minimizes exposure to contaminated soil during implementation of the remedy. Because the revised remedy should be highly effective and has a reasonable estimated cost of $2.5 million, the revised remedy is cost-effective.

4. Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Possible

Although treatment of contaminated soils at the site was part of the original ROD remedy, and was considered as Alternative 4 in the FFS, the EPA determined that the alternative was not practical. The EPA has determined that the remedy described in this Amended ROD represents the maximum extent to which permanent solutions and treatment technologies can be applied cost-effectively to contain contaminated soil at the Selma Superfund site.

5. Preference for Treatment

The removal and treatment or in situ treatment of all, or even a substantial portion, of the contaminated soils underlying the Selma site is not economically feasible. In addition, removal and off-site disposal of contaminated soil would incur short-term risks during transportation and handling of the soil. This revised remedy uses containment, monitoring, and institutional controls rather than treatment to address the threats posed by the contaminated soil.

6. Five-Year Review

Because this remedy will result in hazardous substances remaining on site at concentrations that exceed levels that allow for unlimited use and unrestricted exposure, a statutory review will be conducted at least once every five years after initiation of the remedial action to confirm that the remedy is protective of human health and the environment.

PART III: RESPONSIVENESS SUMMARY

SUPPORT AGENCY COMMENTS

The Department of Toxic Substances Control (DTSC) has expressed their support for EPA's preferred remedial alternative in a letter to EPA dated September 24, 2003.

HISTORY OF COMMUNITY INVOLVEMENT WITH SELMA PRESSURE TREATING SUPERFUND SITE

The EPA placed the Selma site on the National Priorities List (NPL) of Superfund sites in 1983. The EPA involved the community in the ensuing investigation process, which culminated in the original Record of Decision (ROD) in 1988. The community's input has been useful to the EPA in guiding investigation and design processes.

The EPA and USACE undertook additional investigations at the site after 1991, which ultimately revealed the need for this revised remedy, due to much higher than anticipated quantities of contaminated soil. The results of the additional investigations and the alternatives considered by the EPA in the Focused Feasibility Study (FFS) for the site are, and have been maintained, in the Administrative Record for the site. The EPA held a formal public comment period on the Proposed Plan for the revised remedy from July 23 to August 22, 2003. EPA received a single comment letter during this comment period. The EPA also held a public meeting on August 7, 2003, in Selma to present the Proposed Plan and to receive comments from the community and any interested parties.

SUMMARY OF COMMENTS RECEIVED AND AGENCY RESPONSES

Comments from the August 7, 2003, public meeting

Comment (1) Mr. Gerald Petrie, Site Owner:

Mr. Petrie expressed a strong preference that the contaminated soil be removed from the site rather than being enclosed in the on-site impoundment as proposed by the EPA. Mr. Petrie compared the proposed impoundment to "Mount Trashmore" in Fresno, California, as a potential eyesore. Mr. Petrie identified himself as a proud resident of Selma who feels that the site, and therefore the City, would be more attractive if the soil were removed from the site.

EPA's Response to Comment (1)

EPA is sensitive to aesthetic issues associated with the proposed remedial alternative. However, off-site disposal of site soil was rejected as an appropriate remedial solution because of the prohibitively high cost associated with that option.

Comment (2) Mr. David Kazanjian, local resident:

Mr. Kazanjian stated that he was speaking on behalf of himself and his grandfather, who owns property on Dockery Lane. Mr. Kazanjian expressed frustration over the length of time it has taken to remediate the site. He directed EPA to "just get it done" so that redevelopment of the property can proceed.

EPA's Response to Comment (2):

EPA empathizes with the frustration Mr. Kazanjian expressed over the length of time remediation of the site has taken. It is EPA's intent to complete site remediation as quickly as possible.

Comment (3) Mr. Gerald Petrie, Site Owner:

Mr. Petrie indicated that wood treatment operations at the site ceased in 1986, not 1994 as stated in the presentation. Mr. Petrie also indicated that wood treatment operations began at the site in 1942 not 1936, as stated in the presentation. Mr. Petrie provided additional details on the history of the site.

EPA's Response to Comment (3):

EPA thanks Mr. Petrie for the information provided.

Comment (4) Mr. David Doyle, Esq., Mr. Petrie's Attorney:

Mr. Doyle noted that, over the years of his involvement with the site, he has seen the agency's approach to the remediation of soil evolve towards equally effective but less expensive methods. Mr. Doyle expressed frustration over the technologies being used to treat affected groundwater at the site. Mr. Doyle indicated that while new and different methods for dealing with soil at the site are being discussed, the groundwater remediation technologies being used are primitive. Mr. Doyle asked whether there will be some type of review of groundwater treatment technologies that might expedite groundwater cleanup.

EPA's Response to Comment (4):

The proposed remedial action is to address soil contamination at the Site. Groundwater remediation is not currently under discussion. As funds allow, EPA will assess the efficacy of other technologies to speed up groundwater remediation at the Site.

Comment (5) Mr. Dennis Lujan, Mayor, City of Selma:

Mayor Lujan indicated that he has been involved in activities related to the clean-up of the site since 1983 when he was a member of the Selma City Council. Mayor Lujan stated that, as a representative of the citizens of Selma, he wanted EPA to know that the health and safety of the citizens of Selma is their number one priority, and that development of the site is their number two priority. Mayor Lujan suggested that EPA look at new technologies to speed up the groundwater cleanup. Mayor Lujan stated that the City strongly advocated removal of contaminated soil off site as that would give the City more property to market, and maximize the potential of the site. Mayor Lujan also stated his belief that the ponding basins are too large. Mayor Lujan commended EPA representatives for being at the meeting and listening to the people of Selma. He asked EPA to look for the best currently available technology for the groundwater cleanup. He also asked that EPA complete the cleanup as quickly as possible.

EPA's Response to Comment (5)

As stated in EPA's response to Comment 1, EPA rejected off-site disposal of site soil as an appropriate remedial solution because of the prohibitively high cost associated with that option.

As stated in EPA's response to Comment 4, groundwater remediation is not currently under discussion. As funds allow, EPA will assess the efficacy of other technologies to speed up groundwater remediation at the Site.

With regards the size of the percolation ponds, it should be noted that these ponds dispose of clean treated groundwater via both evaporation and infiltration. Both of these processes are dependant on the surface area of the basins, rather than the total volume of the basins. As funds allow, EPA may reevaluate the required area of the percolation ponds; however, it should be noted that increasing the depth of the water in the basins may not allow for adequate evaporation and infiltration of the volume of water required. Also, stormewater runoff from the paved areas of the site and the impoundment need to be contained and will be routed to the ponds.

Comment (6) Mr. Gerald Petrie, Site Owner:

Mr. Petrie expressed an opinion that, instead of the two ponding basins currently installed at the site, if one was dug deeper then only one would be required.

EPA's Response to Comment (6):
As funds allow, EPA will assess whether the number of percolation ponds can be reduced.

Comment (7) Mr. D.B. Heusser, City Manager:

Mr. Heusser stated that at a meeting in 1999, soil remediation alternatives for the site were discussed. At that time the City of Selma understood that taking dirt off-site was financially infeasible. During that meeting, the City of Selma went on the record as approving EPA's preferred soil remediation method although they did not like the idea of putting the soil in the "monolith".

EPA's Response to Comment (7)

EPA thanks Mr. Heusser for the information.

Written Comments received July 23 to August 22, 2003

A letter from Mayor Dennis Lujan on behalf of the City of Selma was sent to the EPA on August 21, 2003. Mayor Lujan asked the following specific questions in his letter.

(1) What is the currently anticipated time frame for completion of the groundwater remediation? The City considers the prospect of several more decades of groundwater remediation to be undesirable assuming viable new technology is available.
(2) What new technology is currently available for in situ remediation of chromium located in groundwater?
(3) Why is not the latest new technology for in situ remediation being utilized at the Site? The City was informed at the Public Meeting that molassess has proved to be a viable method of treatment.
(4) What can currently be done to increase the amount of the land at the Site that can be made available for development and to enhance the attractiveness of the Site?
- *Can the ponding basins be consolidated into one pond?*

- *Can the area utilized for access to the groundwater treatment facilities be reduced? For example can the access road be placed closer to the northern boundary of the property?*
- *Can the cement block fence that used to surround the house on the Site be replaced with another cement block wall? Currently there is only a chain link fence.*

EPA Response to question (1)

Completion of the groundwater remediation is currently anticipated to take in excess of 10 years.

EPA Response to question (2)

In recent years there has been an increased use of in situ remediation techniques to treat groundwater affected with hexavalent chromium. Chemicals (reducing agents) can be added to groundwater causing a chemical reduction reaction that transforms soluble hexavalent chromium to relatively insoluble trivalent chromium. Available reducing agents include calcium polysulfide, sodium dithionite, gaseous hydrogen sulfide and zero valent iron. Reducing agents can result in undesirable increases in sulfates, however. Alternatively, organic materials (e.g., sugars, alcohols, food wastes) and nutrients (e.g. yeast) can be added to groundwater to stimulate microbial activity and enhance biotransformation of hexavalent chromium to trivalent chromium. This process is called enhanced bioremediation.

EPA Response to question (3)

The proposed remedial action is to address soil contamination at the Site. Groundwater remediation is not the subject of this document. As funds allow, EPA will assess the applicability of in situ techniques for groundwater remediation at the Site.

EPA Response to question (4)

As funds allow, EPA will assess what can be done to increase the amount of land at the Site.

CHANGES TO THE REVISED REMEDY IN RESPONSE TO PUBLIC COMMENTS

There are no changes proposed to the revised remedy based on public comments received.

TABLE 2

FEDERAL AND STATE CHEMICAL- AND ACTION-SPECIFIC ARARS

Selma Pressure Treating Superfund Site
Selma, California

REQUIREMENT	DESCRIPTION	COMMENTS
FEDERAL REQUIREMENTS*		
22 CCR § 66261	Establishes criteria for identifying hazardous waste subject to the Subtitle C treatment, storage, and disposal requirements. Applicable for determining whether items such as excavated soils, treatment residuals (e.g., spent carbon), or drilling wastes, are to be classified as hazardous waste.	This is a chemical-specific requirement for all site activities that involve excavation of hazardous media or other handling of hazardous waste on site. Only substantive requirements are ARARs.
22 CCR § 66262 et seq. (Standards Applicable to Generators of Hazardous Waste)	Standards for generators of hazardous waste when the remedial action constitutes treatment, storage, or disposal of hazardous waste.	These action-specific requirements apply to generation of hazardous wastes, such as the excavation and staging of contaminated soil prior to further treatment, storage, or disposal. Only substantive requirements are ARARs.
22 CCR § 66264.90 through § 66264.101 (Releases from Solid Waste Management Units)	Applicable to owners or operators of facilities that treat, store, or dispose of hazardous waste. Specifies that COCs must be listed, point of compliance established and concentration limits for COCs defined. Detection monitoring and point of compliance monitoring programs must be implemented to include groundwater monitoring at appropriate levels.	Specifies location of groundwater monitoring wells.
22 CCR § 66264.110 through § 66264.120 (Closure and Post-closure)	All permitted RCRA hazardous waste management units must submit a closure and post-closure plan designed to prevent hazardous wastes from entering groundwater, surface waters, and atmosphere. Establishes controls to prevent releases of hazardous wastes. Requirements include decontamination of equipment, structures, and soils. Post-closure care, which includes monitoring and reporting, must continue for 30 years.	This Action-specific ARAR is applicable to all site activities involving the equivalent of RCRA waste management units such as landfills, waste piles, and surface impoundments.

TABLE 2

FEDERAL AND STATE CHEMICAL- AND ACTION-SPECIFIC ARARS

Selma Pressure Treating Superfund Site
Selma, California

REQUIREMENT	DESCRIPTION	COMMENTS
22 CCR § 66264.310 (Closure and Post-Closure Care)	Requires that a cap covering hazardous waste left in place meet certain design requirements aimed at maintaining the integrity of the cover and minimizing the migration of liquids through the capped area. Includes requirement that cover maintains integrity when subject to earthquake forces.	Portions of these requirements are applicable to the cap; those portions requiring MTRs, such as leachate collection systems, are relevant and appropriate.
STATE ARARS		
San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) Rule 403	Requires reasonable precaution to prevent fugitive dusts from being airborne beyond the boundaries of the property from which the emissions originate.	This is an action-specific ARAR applicable to any remedial activity that may cause the release of fugitive dust.
SJUVAPCD Rule 4201	Prohibits the release or discharge from any single-source operation of dust, fumes, or total suspended particulate matter emission in excess of 0.1 grain per standard cubic foot.	This action-specific ARAR is applicable to any remedial activity that may cause the release of particulate matter, including excavation and construction.
SJUVAPCD Rule 4202	Sets emission rates for the discharge of dust and condensed fumes into the atmosphere.	This is an action-specific ARAR that is applicable to any remedial activity that may cause the release of dust or condensed fumes, including excavation and construction.
SJUVAPCD Rule 8020	Requires appropriate dust control measures, stabilization of disturbed areas during activity to effectively limit visible dust emissions (VDE) (defined as view opacity greater than 40% for three minutes in any one hour), effective limitation of VDE on unpaved on-site and off-site access roads, and minimization of accumulated mud or dirt from adjacent public paved roads.	This action-specific ARAR applies to any construction, demolition, excavation, extraction, or water mining-related disturbances of soil including land clearing, ground excavation, land leveling, grading, cut and fill operations, travel on and to the site, demolition and the initial construction of landfills.

*State of California hazardous waste regulations that are part of the approved federal program are considered federal ARARs.